Medical Profession Only

NUTRITION AND THERAPEUTICS

FEBRUARY 1941 VOLUME VI. No. 4

CONTENTS

	PAGE
GLOSSITIS AND VITAMIN B_2 COMPLEX . .	75
SKIN TREATMENT WITH MERSAGEL . .	77
THE "FROTH" TREATMENT OF VARICOSE VENULES	81
ANAEMIA IN WOMEN WORKERS . . .	86
NUTRITIONAL STIMULUS TO HEALTH . .	91
NOTES: *Intractable Psoriasis: A Case Note*	80
The Reality of Partial Deficiencies .	89
Hemeralopia and Vitamin A . . .	93
Ascorbic Acid and Wound Healing . .	94

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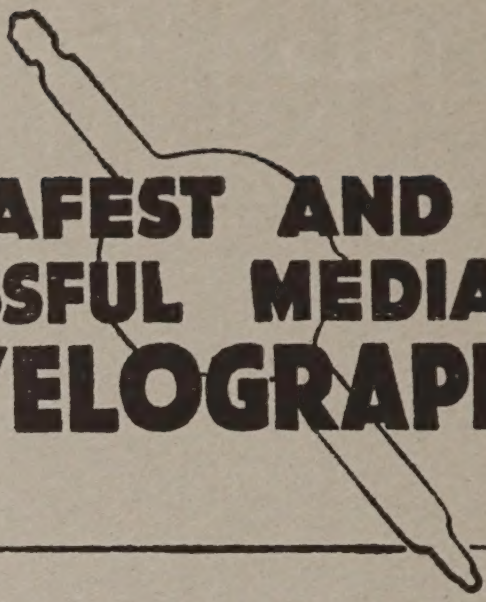

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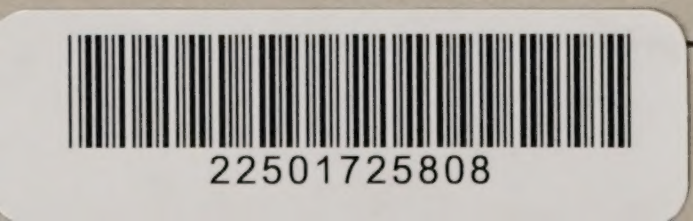
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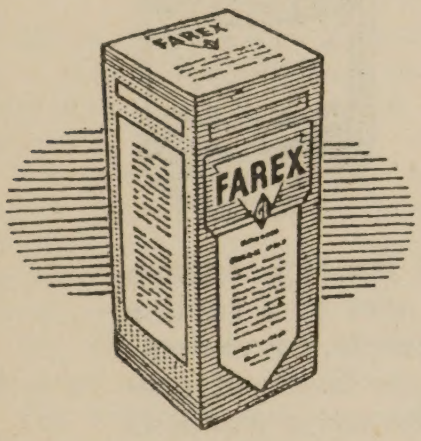
FOR NUTRITIONAL SECURITY

The essential factors in one food



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NUTRITION AND THERAPEUTICS

Medical Journal of Glaxo Laboratories Ltd.

Vol. 6] FEBRUARY 1941 [No. 4

Glossitis and Vitamin B_2 Complex

In Pellagra, Sprue, and Allied States

P. Manson-Bahr (*Lancet*, 1940, 2, 317) gives an illuminating account of a complex aetiological correlation between a number of allied nutritional states in which glossitis is a common presenting symptom.

The aphorism " raw red tongue, raw red gut " may contain more than a grain of truth; the tongue may be regarded as a mirror of the stomach and intestines. Sprue tongue is well known, and a similar condition is seen in pellagra, pernicious anaemia, and idiopathic steatorrhoea, all characterized by anaemia and intestinal upset.

The known aetiological factors in this group of diseases include nicotinic acid and riboflavin.

The following table is used to classify aetiologically the diseases characterized by glossitis:

Aetiological Factors	*Syndrome*	*Possible Contributory Factors*
	Pellagra	
Deficiency of P.P. factor:		Bacillary dysentery, amoebiasis, intestinal tuberculosis, chronic alcoholism, other chronic intestinal diseases, including sprue and idiopathic steatorrhoea
(1) Nicotinic acid	Glossitis, dermatitis, and changes in spinal cord	
(2) Riboflavin (lactoflavin)	Cheilosis (angular stomatitis)	
	Tropical Sprue	
(1) Specific (virus ?)	—	Previous intestinal infection
(2) Deficiency of extrinsic and intrinsic factors of pernicious anaemia	Megalocytic anaemia	—
(3) Deficiency of vitamin B_2 complex	Glossitis and (rarely) changes in spinal cord	—

Aetiological Factors	*Syndrome*	*Possible Contributory Factors*
	ADDISONIAN PERNICIOUS ANAEMIA	
(1) Deficiency of extrinsic and intrinsic factors of pernicious anaemia	Megalocytic anaemia	—
(2) Deficiency of vitamin B_2 complex	Glossitis and changes in spinal cord	—
	IDIOPATHIC STEATORRHOEA	
(1) Congenital defect	—	Coeliac disease
(2) Deficiency of vitamin D	Osteoporosis, hypocalcaemia	—
(3) Deficiency of vitamin B_2 complex	Glossitis, stomatitis, megacolon	—
(4) ? Factors of pernicious anaemia	Megalocytic anaemia in some cases	—
	NUTRITIONAL MEGALOCYTIC ANAEMIA	
Nutritional absence of extrinsic factor	Glossitis and megalocytic anaemia	Pregnancy and malaria

Conclusions

It has been shown that glossitis, probably of a similar nature and non-specific to the disease, is found in pellagra, sprue, pernicious anaemia, the nutritional anaemias, and idiopathic steatorrhoea, and that through this and other features, such as changes in the spinal cord, these diseases are closely related to one another. It is therefore suggested, on analogical as well as therapeutic grounds, that a deficiency of the vitamin B_2 complex, which appears to be common to all, may partially explain these phenomena. It is further suggested that nicotinic acid and riboflavin play an important part in the treatment of sprue as well as of pellagra, pernicious anaemia, subacute combined degeneration of the cord, and, to some extent, of idiopathic steatorrhoea.

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Skin Treatment with Mersagel

Widening Scope of Use in General Practice

FOURTEEN months ago Mersagel* was introduced to me as an excellent specific treatment of ringworm of the feet, groin, or axillae. Since then I have had the opportunity of making extensive trial of this preparation and can fully confirm that it is a highly active agent against such infections, and that its base makes it both convenient and easy to use and plainly allows maximum contact and effect between the active substance and the area being treated.

Although the makers only claim that Mersagel is effective against ringworm infections, I have found it in fact a powerful general antiseptic: any areas of secondary infection of the skin on or surrounding the primary tinea infection clear up rapidly. It is, moreover, non-irritant to skin or tissues and, as a result of experience is now used by me as a dressing for a considerable variety of everyday skin infections.

The incidence of skin ringworm infections has increased very greatly since the outbreak of war, due largely to barracks, camp, and shelter life. The importance of having a preparation that is rapidly effective for treatment cannot be overestimated, as the condition affects both the serviceability of the individual and the community in which he is living—ringworm of the feet can be very disabling and is very infectious.

Method of Application

Mersagel has been applied night and morning—only in very severe cases has it been used three times daily.

On the foot Mersagel is applied lightly to the whole surface, irrespective of the area affected. The foot is allowed to remain exposed to the air for 5 minutes after application and, in mild cases, any excess of the Mersagel is lightly wiped off. In more severe cases, a thin gauze covering is fixed around the foot before the sock is replaced. A thin piece of gauze between the toes is also preferred.

A light application is usually given also to the other foot because, even though it may not be already affected, it very often becomes involved later if precautions are not properly taken. Particular attention is paid to applying the jelly between the toes.

In the groin or axilla Mersagel is lightly applied and the parts left exposed for a few minutes. It is rarely necessary to apply a dressing, and the clothes can be worn much more comfortably than when a greasy ointment has been used.

* Phenyl mercuric acetate (1 in 750) in a water-soluble jelly base.

In the intergluteal fold—a common site of tinea that is rarely referred to—it is always well to insert a very thin slip of gauze after the jelly has been applied.

Duration of Treatment

Improvement is noted in most cases within 24 hours. The earlier that treatment is commenced, the shorter will be its period. Many cases clear up in the remarkably short time of 3 or 4 days, but in the more chronic cases, when the infection has penetrated more deeply in the skin, good results naturally take longer to achieve. (In a large area of infection it is noticeable that the margin is often more resistant than the centre.) Even so really severe cases yield within 10 days, but I consider that treatment should be continued for 5 days longer, although the skin may have become apparently healthy. By this means the recurring infection, familiar to all doctors, can be obviated.

Value of Mersagel in Sweating Feet

Before referring to specific cases, it is of interest to note that I have found Mersagel to have a remarkable and rapid effect in a condition very common at the present time—namely, excessive perspiration of the feet. This condition is no doubt brought about by the subject being on his feet for very long periods without opportunity to change footwear. It can be the cause of considerable discomfort. (In some cases the condition may be due to a ringworm infection, but I have never been able to demonstrate this.) Often the sweating causes an objectionable odour, and in severe cases the skin of the feet may become soft and tender. I have found that all cases of this complaint respond within a few days to the regular application of Mersagel after the bath or first thing each morning. About 15 such cases have received Mersagel treatment with rapid and satisfactory results in every case.

Clinical Notes

The following brief notes of some of the many cases that I have treated with Mersagel may be of interest:

(a) *Ringworm of the Foot*

(1) Male, age 21.—Had "inflammation of the foot" for 6 days before reporting. Changed his boots to a pair that rubbed badly over the dorsum of the foot, and the condition became painful and aggravated. He stayed in bed for 2 days and applied hot fomentations, with the result that the general condition became much worse.

When I saw him he had a ringworm infection over practically the whole foot and involving the ankle. There were some areas of secondary septic infection, and numerous small septic spots around the margin and on the dorsum of the foot. The skin was oedematous and broken at one or two points.
He was left in bed and applications of Mersagel were given 3 times daily. Immediately a rapid and progressive improvement occurred; he was up in 2 days and able to put on a shoe in 4 days. He returned to duty on the seventh day, and by the eleventh day the condition had completely cleared.
This was one of the most severe cases I have seen, and the rapid improvement noted each day was quite remarkable.

(2) Male, age 30.—A chronic case of ringworm between the toes. The skin here was thickened, white, and soggy in the interdigital space, and there was a slight surrounding area of infection on the top of the base of the toes. The patient had had the condition for several years and on about five occasions there had been a flare up.
Mersagel was applied, and some of the dead thickened skin removed carefully with a small fine scalpel. Because of the very chronic nature of this infection, treatment was continued for nearly a month, but during the last week the skin between the toes was normal and the wet soggy condition had completely disappeared.

In chronic interdigital cases such as the one above, it is worth giving much attention to the thick dead skin that accumulates between the toes. The subject who develops this infection in chronic form is often the man whose toes are "crowded" at the base, and the dead superficial epithelium does not desquamate there.

(b) *Ringworm of the Groin*

(3) Male, age 27.—Ringworm of the groin. He had developed "dhobi's itch" when in India 6 years previously. It had never completely cleared up, and he had had several recurrences which on each occasion, even with treatment, lasted 3–4 weeks.
When I saw him first he had a fairly severe attack, affecting both groins and extending over the front of the thigh and downwards on the inside for about 8 inches.
Mersagel was applied twice daily, and the condition receded rapidly. In 10 days there was only a small area left on each side of the scrotal fold. Treatment was continued for 3 weeks, after which, on careful examination, there was no visible infection and it appeared to have completely cleared up.
The patient stated that this was the first time for 6 years that he had been completely free from the condition, and I agreed with his suggestion that he might apply Mersagel once a fortnight as a prophylactic measure.

(4) Male, age 19.—A mild and early case of ringworm of the right axilla and left groin. Mersagel applied night and morning, and the skin was normal in 5 days.

(c) *Excessive Foot Perspiration*

(5) Male, age 32.—Complained of " tender feet." On enquiry I learned that he had noted excessive sweating for two months, persisting in spite of frequent changes of socks and bathing of the feet and the use of powder. The perspiration had a very marked and unusual odour.

On examination, the skin of the feet was noted to be very moist and there was a faint, slightly pink tinge on the heel and soles. I looked for the fungus microscopically but did not find it, and the appearance was not at all suggestive of ringworm.

Application of Mersagel twice daily stopped the perspiration and offensive odour almost at once, and the skin became normal. This patient used Mersagel for a week, applying it after his bath, then ceased. Two months later there had been no recurrence.

Conclusions

These are only a very few of the numerous cases in which I have used Mersagel successfully, but I would like to add that as an antiseptic jelly I find the product has great value in many conditions: I now use it frequently in septic skin abrasions, in seborrhoea of the skin (in which it is very effective), and in indolent infection following injuries involving the skin. I have never found Mersagel to cause irritation, I have seen no idiosyncrasy towards it, and altogether I find it one of the really useful therapeutic substances of everyday practice.

INTRACTABLE PSORIASIS: A CASE NOTE

A CHRONIC case of psoriasis recently came under my attention. The patient, a man born in 1887, was first affected at 12 years of age. There was no previous history of this complaint in the family and for over 30 years, until this year, the patient's general health had been so good he had not required medical attention. Various attempts to deal with the skin trouble had been made by medical men, but the patient had long since resigned himself merely to keeping his affliction within bounds. Its extent was: arms, patches on outer surfaces of both upper and lower portions; legs, fairly large areas on front and calf of each; thighs, intermittent patches on outer surfaces varying in size according to season and sometimes clearing completely.

In the early part of this year the patient developed influenza followed by bronchitis. At that time the skin trouble was more or less " as usual," but with deterioration of physical condition the severity increased. Some time later I treated him for the psoriasis

and gave a series of nine injections of mercolloid. By this time at least four-fifths of the frame was covered, including head, face, ears, and hands—parts never previously affected. Irritation had become so acute as to be almost unbearable and the patient has since told me he had to " take a firm grip of himself to maintain his reason." All areas affected were highly inflamed.

A specialist was consulted and treatment was prescribed: an ichthyol preparation for the head, and phenol in a calamine liniment for the other parts of the body.

Trial with Derobin

The head treatment was effective but, after some weeks' trial, that for other parts was not. Reference back to the specialist brought recommendation of a Derobin ointment prescription, the one selected being that containing acid. salicyl., hydrarg. ammon. and liq. picis. carb.

This treatment was begun on September 13th, 1940. The patient persevered unremittingly, applying the ointment twice daily and using oil silk for the purpose. The intense irritation subsided very gradually and the affected parts, after first losing inflammation, slowly became brown. Considerable areas, previously badly affected, are now entirely clear and good hairy growth is apparent. Now, eight weeks later, not only is the patient within measurable distance of normality but areas continuously affected for 40 years are showing great improvement and will, I think (granted continuity of Derobin treatment) become almost if not entirely cleared.

The "Froth" Treatment of Varicose Venules

AN INTERESTING USE OF SCLEROSING AGENTS

IT may be considered that varicose venules do not need treatment, but for women who have to wear thin and transparent stockings—especially theatrical women who have to wear "tights" or appear with bare legs—the occurrence of patches of these venules gives a bruised appearance to the legs which is disadvantageous and may affect their work. Often enough, it is only on close inspection that the patent bruise reveals itself as a small bunch of venules.

For some years now I have been sclerosing varicose venules with a five per cent. solution of sodium morrhuate, which practice has achieved very good results. The only disadvantage, and a serious one to those patients who are anxious not to show a mark, was the occasional occurrence of a small slough at the point of injection. This was due, doubtless, to the leakage of the solution backwards along the needle track—a likely occurrence when one considers that these tiny veins have only a thin layer of skin covering them.

First—a Small Needle

After several trials, I found the most satisfactory method of treating varicose venules was by the " froth " treatment, one that came to me accidentally, and of which little has been heard up to the present. (A short annotation of this method by R. S. Harvey appeared in *Post-graduate Surgery*, edited by R. Maingot—D. Appleton-Century Co. Inc., New York, 1936.)

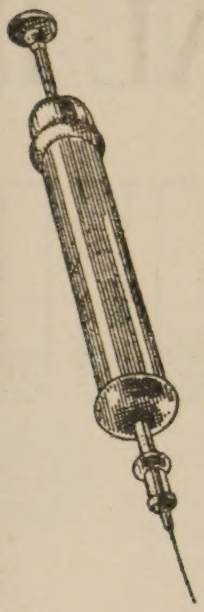
Briefly, my method is first to select a very small hypodermic needle—in fact at times when the venules were small enough to demand it I have fitted a Schick intradermal test needle to my syringe. 0·5 cc. of the sclerosing solution is drawn into the syringe which is then shaken well until a froth is formed. This froth is then slowly and carefully injected into a venule in the centre of the " bruised " patch, a procedure to be performed cautiously because of the ease with which the venule can be ruptured.

The Outward and Visible Signs

It is fascinating to watch the progress of the froth from one venule to another (a progress readily visible to the naked eye) causing the bluish-looking venules to become a bright pink colour as the frothy solution courses through them. Each venule assuming this bright new complexion becomes sclerosed, and any remaining bluish ones can be picked up at a later date. The cleanly looking appearance of these patches after treatment is really quite surprising—and most pleasing.

The Advantages of Ethamolin

For the last six months I have substituted Ethamolin for the five per cent. sodium morrhuate. This has achieved two important results. In the first place, a puncture slough is much less frequent, though I doubt if it can always be eliminated. When it has occurred, it has healed up within a fortnight and the resulting scar is so small as to be barely noticeable. Secondly, where the needle transfixes the venule or has proved larger in calibre than the venule to be entered, the resulting injection of Ethamolin into the perivenous tissues gives rise to much less trouble than with sodium morrhuate. Trouble of this type can of course be largely eliminated by care in injection, but the advantage of Ethamolin assists the confidence of both practitioner and patient. When the venule is correctly entered, little resistance to the flow of the froth is experienced, and swelling around the point of injection is not found. Two further points making for success are firstly, to always use a sharp needle, and secondly, to pierce the venule in a longitudinal and not a transverse axis.



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The above Dissolved Vaccines *Glaxo* are available in 5 cc., 10 cc., and 25 cc. rubber-capped bottles.

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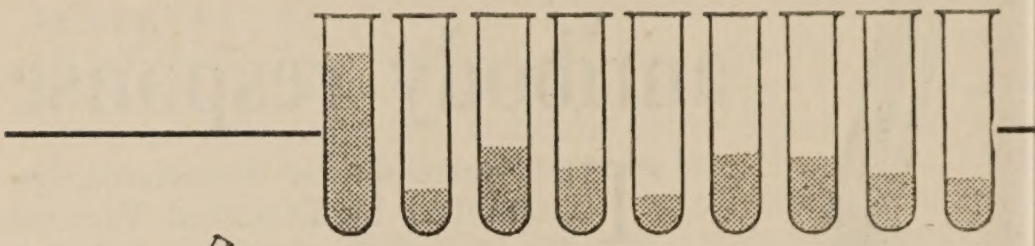

Normally, the individual finds a good supply of vitamins in his food *so long as that food is reasonably varied.* The present time, with its curtailment of this necessary variety, gives an added importance to vitamin therapy and it becomes imperative to give more attention to the practical importance of vitamins per se, both in prophylaxis and treatment.

A **PREPALIN** High concentrate of vitamin A, widely used in disorders involving the epithelial structures, and in the early stages of influenza and other respiratory diseases. Also of value in night blindness. Available in capsules, liquid, and ampoules.

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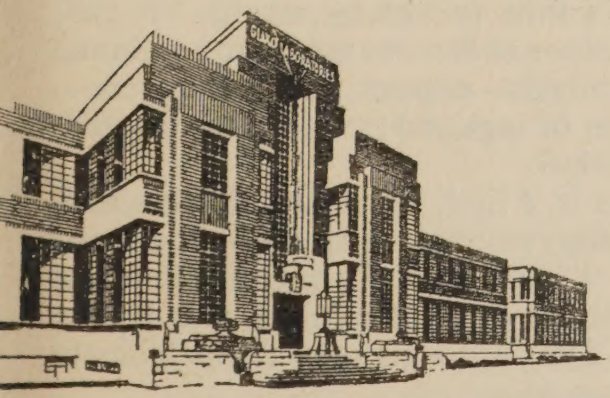


Anaemia in Women Workers

Practical Observations on Ferrous Iron Therapy

IRON-DEFICIENCY anaemia is one of the most common causes of ill-health and lost working efficiency, and yet it is one of the conditions most responsive to proper treatment.

This type of anaemia chiefly develops among women, and at a time when women's services are being so much called upon by the nation, it is essential that the medical practitioner should be constantly on the look-out for the diagnosis of iron-deficiency anaemia, and be certain to apply the adequate treatment. This is all the more important because, for women at work, meals may be erratic both in time and quality.

The Importance of Considering Iron-Deficiency

As a general practitioner I have for several years observed the rapid and continuous improvement of patients on iron therapy, and the narrowing of the group of " debility " cases by removing patients from this category by the accurate diagnosis of iron-deficiency anaemia.

I would like to draw attention to one matter that appears to have received less attention than it deserves. Injured people, particularly if the injury is serious and has been associated with blood loss, are given blood transfusion. I have often been surprised that this is not more frequently followed by iron therapy. In most cases of severe injury that have come under my care after discharge from hospital, I have found it an advantage to examine the blood haemoglobin level. In a number of cases the level is between 70 and 85 per cent.

Adequacy—and Choice—of Iron Treatment

What is " adequate treatment " ? Adequate treatment can be given by large doses of ferri et ammon. cit. (never by small), or by large doses of Blaud's Pills (never by small). It can, however, be given by *small* doses of ferrous sulphate combined with minute doses of the metals—copper and manganese—that aid the rapid conversion of ingested iron into the oxygen-carrying pigment, haemoglobin.

The preparation of choice is, I find, Fersolate tablets which contain 3 gr. exsiccated ferrous sulphate with 0·01 gr. copper and manganese sulphates. I have used this preparation now for four years; it is convenient and economical, and I have always found it successful. The following case notes indicate some of the responses I have observed.

Marked Hypochromic Anaemia

Case I.—Female, age 21. Factory worker on war production. Has lost 5 days in 3 weeks from headaches, general tiredness, and a feeling of inability to carry out her work. Towards the end of the day, a kindly works foreman often permits her to rest for the last hour. Menstruation profuse for 4 months, and her appetite poor.

Examination showed no gross abnormality, but the patient was pale and her heart-sounds poor. I examined her blood and found haemoglobin 65 per cent. and red cells 4 million.

I gave her Fersolate tablets, one after each meal, and made a weekly examination of the haemoglobin level.

End of first week	..	70 per cent.
„ second „	..	85 per cent. (15 per cent. gain in 7 days).
„ third „	..	90 per cent., red-blood cells 4·6 million.
„ fourth „	..	100 per cent. (30 per cent. gain in 28 days).

At the same time, the patient's appetite and general well-being made a noticeable subjective improvement within 2 days. She returned to work after 10 days, and has remained fit and able to do a full day's work with even occasional overtime.

It is of interest to note that in this case, as frequently happens, the improvement in the haemoglobin level in the first week was small, in the second week large, and less again in the third week. It is almost usual to find little change in the first few days, then rapid improvement, followed by slower regeneration after the 90 per cent. mark has been reached.

Assistance by Liver Extract Injection

Case II.—Female, age 31. Factory worker engaged on war production. Complains of listlessness and fatigue for 2 months. She readily becomes breathless, and suffers from palpitation. Appetite poor; sleeps badly although she feels tired. Has had 7 days off work in 2 months. Menstruation irregular and scanty. Has been treated with a stock " Mist. Ferri arsenicalis," presumably containing not more than 10 grains of ferri et ammon. cit.

On examination the patient was markedly pale, muscle tone poor, and the skin was very dry. She had a patch of alopecia on left temple. Tendon reflexes were exaggerated. Blood examination showed haemoglobin 60 per cent., R.B.C.s 3·6 million. The patient was unable to remain off work in the early period of the treatment, although at the low haemoglobin level then shown this would have been very desirable.

She was given Fersolate tablets daily, beginning with two and increasing to four after 3 days. She was also given one injection of liver extract (Examen 2 cc.).

The result of an examination of the blood every 7 days was:

After first week. Haemoglobin 65 per cent. R.B.C.s 4·0 million.
„ second „ „ 78 „ „ 4·4 „
„ third „ „ 90 „ „ 4·7 „
„ fourth „ „ 95 „ „ 5·2 „

The improvement in the blood picture coincided with an improvement in general physical condition, and the patient stated at the end of the second week that she felt perfectly fit once more, and that her symptoms had gone.

It is scarcely necessary to comment that in this woman's case her capacity for effective work was improved almost as much in proportion as her haemoglobin.

Comment

These two cases are examples of fairly severe degree of iron-deficiency anaemia. I have found it beneficial in such cases sometimes to give one or two doses of Examen liver extract at the commencement of treatment, particularly if the patient cannot remain off work. It is my impression that this gives a more rapid initial stimulus, and the patient usually feels an improvement in appetite and vigour after one or two days.

Minor Iron Deficiency

Minor degrees of anaemia, with a haemoglobin level of 85–90 per cent. and a red-cell count of 4·7–5 million, may also show a definite loss of working efficiency. I could cite many cases of this, but the following is typical.

Case III.—Female, age 27. She has not felt completely fit for some time but, after an attack of tonsillitis, made a very slow recovery out of all proportion to the severity of the attack. Has been taking a glycerophosphate mixture without much benefit, and after 14 days is still unable to return to work.

I made a blood examination and found a haemoglobin of 85 per cent., and R.B.C. of 4·75 million. On giving three Fersolate tablets daily there was immediate and noticeable improvement in the patient's general condition and she returned to work after 7 days' treatment. When seen again, 3 weeks later, the patient acknowledged feeling fitter than she had been for a long time. Examination of the blood revealed 100 per cent. haemoglobin and 5·2 million red cells.

It is obvious that this treatment produced a rapid return to normal in the woman's effective working capacity, and that time—possibly 10 days—might have been saved had Fersolate been introduced earlier.

These are not isolated observations; they are selected from types of cases frequently seen by practitioners and which, more than ever, must be quickly recognized and properly treated.

Useful Points to Remember

Some notes in conclusion. If you are satisfied that a patient has anaemia, look for a cause or contributory factor. If it is found, treat it—*but also treat the anaemia.* Often, as I have mentioned, there are cases of injury with blood loss which have been treated surgically; yet the anaemia of convalescence may be forgotten. Blood transfusion is a life-saving measure, but it does not bring the blood to normal. Convalescence, to be as speedy as possible, requires iron treatment.

Do not be deterred by slight gastric discomfort which may be noted at times with iron therapy. This can be overcome by giving one tablet daily for the first one or two days, with or immediately following meals, increasing the dose subsequently. Some intolerance of adequate iron treatment is not uncommon, but the patient must be encouraged to persevere. The reward will be worthy of the effort.

THE REALITY OF PARTIAL DEFICIENCIES

" The argument that ' because beri-beri is unknown in England therefore everyone must be having enough vitamin B_1 ' is false. There is a wide gap between the *minimum* diet (the amount needed to prevent well-defined clinical symptoms of deficiency) and the *optimum* (the amount needed to promote fullest health). Thus, subnormal nutrition may be present even when there are no obvious physico-clinical signs." (L. J. Harris, *Lancet*, 1940, **2**, 539.)

Dr. Harris further points out that one of the best examples of partial deficiency is the subclinical nutritional anaemia, so common among working-class mothers and infants. It is generally detected only by clinical test but is none the less associated with increased morbidity. Moreover, it has been proved repeatedly that children who have been considered " normal " can show a better performance—weight, height, physique, skin, hair, nails, naughtiness, etc.—when extra supplements are included in their diet. Supplements of vitamin A have improved dark adaptation, and of vitamin B_1, growth-rates and gastro-intestinal function in young children. Szent-Györgyi has ridiculed the idea of subdividing mankind into two categories (*a*) Scurvy and (*b*) No Scurvy—supposing that the latter is synonymous with enough vitamin C for optimal health. The increased susceptibility to infection on diets low in C is well authenticated. Paediatricians have long been aware of sallowness and other prodromal signs in infancy. Similarly, suboptimal intakes of vitamin D produce subclinical rickets—lowered assimilation of calcium and phosphate, minor bony defects, increased incidence of dental caries, and probably impaired muscular tone.

COMBATING THE ANAEMIAS

Constant and predictable success with

FERSOLATE The iron content of Fersolate is in the form of exsiccated ferrous sulphate. Traces of copper and manganese (to assist haematinic action) are included. The daily dose of 3 Fersolate tablets is therapeutically equivalent to 45 gr. Blaud's Pill, and one month's treatment, at a cost of less than 1d. a day, is effective in almost every case of iron-deficiency anaemia.

Bottles of 100, 500, and 1,000.

For reserves of iron, calcium, vitamin D—

CALDEFERRUM Caldeferrum tablets present iron, calcium, and vitamin D in amounts regarded as nutritionally desirable during periods of increased need—growing childhood, adolescence, pregnancy, and lactation. Four Caldeferrum tablets constitute a simple and economical daily routine. The tablets are chocolate coated.

Bottles of 50, 100, 500, and 1,000.

For injection treatment of pernicious anaemia.

EXAMEN Examen Liver Extract is so highly concentrated (each cc. containing the erythrocyte maturing factor of 100 gm. liver) that small and widely-spaced doses are effective both for treatment and for maintenance. Being protein-free and exceptionally pure (10–15 mg. solids per 2 cc.), Examen causes no pain or allergic reaction. The economy and painlessness of Examen injections are great and obvious advantages when lifelong maintenance has to be considered.

Boxes of 3 and 6 × 2 cc. ampoules, also 12 cc. phials.

Nutritional Stimulus to Health

THE TYPICAL CASE—AND A DRAMATIC EXAMPLE

DURING last winter I was frequently consulted on problems of prophylaxis and the maintenance of health: this autumn and winter such enquiries have been still more frequent. A large proportion of my patients are undertaking extra duties; dietary problems are more difficult; and everyone is liable to sudden extra strain and exposure. It is not surprising, therefore, that those subject to more than the ordinary share of the minor ailments of winter, and who recognize that they are not of robust health, should show anxiety.

For some years I have used Adexolin Capsules as a routine measure in these cases, and I have been impressed by the good results. Last winter and this I have prescribed the capsules in considerable numbers of cases, and I have no hesitation in saying that I now consider Adexolin to be one of the most important measures for treatment available at the present day. The product can establish and maintain a normal state of health, vigour, and resistance in patients who have been lacking in all three.

The Typical Case

Let me take, as a typical case, the patient who consults me for perhaps a cold and who states that he never feels very fit in the winter; is tired by the end of the day; lacks appetite; has many colds, some developing into bronchitis; and usually between September and May loses 3–4 weeks from work. Examination shows that the man is underweight, his muscles are flabby, and his skin is often dry. Other physical signs may be few except for catarrh in the nasopharynx.

Management of the Typical Case

Give this man 3 capsules of Adexolin daily for a fortnight and, after that time, there is a noticeable subjective and objective change. He will usually tell you that he feels fitter than he has for a long time. This he may have noticed after the first few days. He has increased vigour and his appetite is improved. Often there is a small gain in weight. He has thrown off his latest cold more readily, and he is much more optimistic about his health generally.

Continue the treatment for 2–3 months, giving one or two capsules daily. At the end of this period the patient will usually remark on his comparative freedom from colds, those

that he has developed being of short duration, slight in character, and with no sequelae. The gain in weight has continued. He has very much better muscular vigour, is less tired at the end of the day, and his skin has become normal in texture. His time off work has been at most a few days only.

Almost invariably one of the questions from such a patient is " Can I go on taking the capsules ? " or " Can I do the same next winter ? " And the answer, to his lasting benefit, is " yes " on both counts.

A Striking Instance of the Typical Case

Such a patient is typical of a large number of cases that I have had in the past five or six years. I would, however, like to describe one in particular that has impressed me greatly.

Early in September 1939 I was consulted by a man, age 41. His occupation was that of an insurance clerk. He was anxious to become an Air Raid Warden, but he felt that he had better consult a doctor first. His history certainly did not encourage one much to agree that he could undertake such extra duties.

He was 5 ft. 10 in. in height, weight 9 st. 4½ lb. His chest was narrow and there was a postural lordosis ; also some evidence of early rickets.

In the past five years this man had been four times in hospital —once for appendicitis, once for pneumonia, once for "colitis" and once for operation for haemorrhoids and X-ray investigation of his gastro-intestinal tract. I understand that the latter demonstrated a marked visceroptosis. In addition to this, over a period of ten years he had undergone three minor nasal operations.

He never felt very fit, had frequent colds, and catarrh all winter. He admitted to becoming readily tired.

I told this patient quite firmly that he could not become an Air Raid Warden, and this greatly disappointed him. I warned him, too, that he had better take particular care of his health, and suggested that he should take Adexolin Capsules and Minadex. He came back three times in four days to ask me if I could change my decision, but I would not.

The next time I saw the man was early in November 1940, after an air raid in the district. There had been a considerable number of casualties, and when they had received attention, a warden came in with a fairly severe cut on the forehead. To my surprise it was my patient of 1939 !

He had taken Adexolin and Minadex on my advice, but after a week or two he decided that he must offer his services for A.R.P. work. He admitted that, in the first month or two,

it was a noticeable strain, but already he felt fitter and reasonably able to undertake it. Also, he felt a steady and continued improvement in his health. He had only one minor and transient cold; his appetite had become very much improved and he said that for months now he had felt better in health than he had been for ten years. His weight had increased by 14¾ lb. He had performed quite exacting duties and actually, in the raid in question, he had behaved with considerable gallantry, as later reports showed.

This is a case in which the benefit of nutritional treatment was given a dramatic test, and much of this man's improvement in health must clearly be ascribed to that treatment which, combined with the exercise and fresh air, had effected a striking transformation. I am quite certain that he could not have gone through without the powerful nutritional stimulus of the Adexolin and Minadex. He himself expressed his gratitude to me for suggesting the treatment, and was apologetic for not returning to see me—because he had not followed my advice to the letter!

HEMERALOPIA AND VITAMIN A

THE need for caution in suggesting vitamin A for the treatment of night-blindness without qualification is underlined by evidence that has been published in a recent paper " Linkage and Crossing-over in the Human Sex Chromosomes " (Theodore White, Ph.D., 1940, *Journal of Genetics*, **40**, 403). This paper records the results of an investigation among the members of a large family in whom certain afflictions of eyesight such as night-blindness, colour blindness, and myopia were proved to be hereditary.

" As for the night-blindness found in this branch of the family, it is undoubtedly congenital stationary night-blindness. This follows from the sex-linked mode of its inheritance, the non-progressive nature of the defect (present from earliest recollection but of constant intensity throughout life), and from the complete absence of any signs of fundus degeneration or pigmentation. The exclusion of any possibility that the defect results from vitamin A deficiency follows from the fact that one of the members was given 48,000 international units of vitamin A per day, in the form of Prepalin capsules, over a period of eighteen months without any appreciable improvement in his night-blindness. The dosage is some six times that generally accepted as required to clear up a vitamin A deficiency night-blindness and the period of treatment much longer than would be required. The negative result of this experiment may be emphasized here as a warning against the apparently growing tendency in medico-physiological circles to consider all forms of night-blindness as resulting from vitamin deficiency."

ASCORBIC ACID AND WOUND HEALING

A Timely Reminder

It is worth while remembering, at the present time, the relationship of vitamin C to the normal healing processes of wounds. Failure of wound healing is a feature of frank scurvy; delay or failure of healing is also a feature of a deficient vitamin C intake. Today, in general practice, many of us are unfortunately seeing an unusually high proportion of superficial wounds and injuries. The two cases that I wish to quote are a clear indication that vitamin C should be considered when dealing with injuries.

Male, age 32.—He had one injury of about ½ in. at the side of the right hand, one on the thigh of about 4 in. diameter, and one about 2½ in. diameter on the arm. These were caused by falling masonry, and the whole thickness of the skin was removed. The preliminary treatment had been thorough cleansing, and the application of sterile vaseline dressing. There was a slight superficial sepsis on the arm but this had cleared up rapidly. No strong antiseptics had been used.
Although the wounds were clean and the edges were not oedematous, the bases showed no granulation tissue, and I was considerably puzzled to find practically no effort at healing after 3 weeks. The only dressing at that time was sterile vaseline.
I gave the patient 10 tablets of Celin (500 mg. ascorbic acid) for 2 days, followed by 5 tablets daily for a week. When the wounds were examined after the first 4 days, granulations were present on the bases and the skin edges showed about 3 mm. of a bluish healing epithelium. Healing progressed rapidly and was complete in 11 days in the largest area.
The complete indolence of the wounds for 3 weeks and the rapid improvement resulting upon ascorbic acid saturation left me in no doubt as to the effect of the Celin treatment.

Male, age 39.—This patient had a large carbuncle on the left shoulder. It ran a rather slow course, but when the sloughs were finally discharged the base and edges, about 3 inches in diameter, became indolent. The edges were indurated, although fomentations had not been used.
After 10 days, in which there was little or no improvement, I gave the patient 5 tablets of Celin daily. An improvement began after 2 days, and healing progressed normally.

Conclusion

It is of especial importance during these days that those dealing with injuries should remember the possible lack of vitamin C intake in the diet. Natural sources of this (e.g. citrous fruits, tomatoes, etc.) are no longer readily available, but the administration of Celin to provide the ascorbic acid may cause a very considerable shortening of the period of disability.

The
TONIC
for early and sustained recovery

IN the work of accelerating patients' return to duty, and limiting the number needing prolonged attention, Syrup Minadex is of the utmost value. It contains three groups of therapeutic agents—vitamin A—calcium, phosphorus and vitamin D—iron and "trace" minerals. The health restored by Minadex is sustained.

6 oz, 12 oz, and 80 oz bottles.

Syrup
MINADEX

RINGWORM

of the glabrous skin

"Ringworm" of the foot and groin is not only a common complaint but also a disabling and highly infectious one. Proper treatment under present conditions is important if its spread is to be prevented.

MERSAGEL
FUNGICIDE JELLY

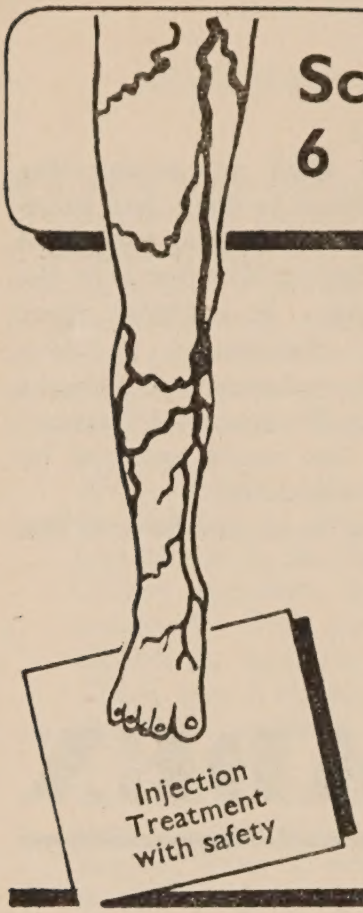
A water-soluble jelly containing phenyl mercuric acetate, an antiseptic of high fungicidal activity, and non-irritant to the skin. Application daily for 3–7 days will rapidly clear up the infection.

1½ oz tubes and 1 lb jars.

DEROBIN
DI-OXY-ANTHRANOL

A synthetic chrysarobin analogue having 2–5 times the therapeutic activity of chrysarobin. Best applied in ointments of from 4–10 gr. to the ounce. Clears up the more chronic and resistant fungus skin infections.

Powder, 1 and 10 gm. tubes.



Sclerosing agent with 6 marked advantages

Briefly the advantages of Ethamolin are that it gives a firm, adherent thrombus ; contains no impurities ; does not cause sloughing, even if leakage occurs ; does not cause muscular cramp or injection ; is constant in potency, which is retained indefinitely ; is available at extremely reasonable cost.

Ethamolin thus virtually eliminates the disadvantages which were formerly liable to attend varicose vein treatment, and provides every practitioner with the means of undertaking the injections with confidence of safety and success.

ETHAMOLIN

6 × 2 cc. ampoules, also 15 cc. and 30 cc. rubber-capped bottles.

For stimulating or increasing the flow of breast milk

Physolactin is a concentration, in aqueous solution, of active lactogenic principles obtained from fresh pituitary and may be given from the first to sixth week to stimulate or increase the flow of breast milk.

COMPOSITION

1 cc. contains not less than 60 international units of prolactin. Undesirable physiologically active substances are removed. Lactogenic potency of each batch is clinically tested.

15 cc. rubber-capped bottles.

PHYSOLACTIN

(LACTOGENIC HORMONE)

these cases the treatment commenced after the development of the typical whoop. Twenty of the 22 cases had only mild symptoms of short duration. Of the remaining two cases, one (a woman of 32) was complicated by bronchitis, and the other (a child of 3½) was weakly and debilitated. In practically all of 35 control cases in same experiment, the disease was prolonged, some cases being incapacitated for as long as two months.

It may be said that Whooping-Cough Dissolved Vaccine *Glaxo* will control and limit the severity of the disease while greatly reducing the risk of complications.

IN CONCLUSION

By the use of Whooping-Cough Dissolved Vaccine Glaxo, it is possible to control the disease without interfering with regular school routine. Apart from occasional very short-lived local reactions, the method is without risk of any kind. The vaccine can be given at the earliest ages, when it is most important to prevent and alleviate the symptoms of the disease.

Fuller particulars of the two experiments alluded to, as well as reports of other cases treated with Whooping-Cough Dissolved Vaccine Glaxo, will be found in "Nutrition and Therapeutics," Volume IV, Nos. 1, 4, 5, Volume V, Nos. 1, 3, 4, 5, 6, Volume VI, No. 1.

DOSAGE

PROPHYLAXIS.—Over 2 years: 3 injections—first 0.5 cc., succeeding doses 1 cc. each. Under 2 years: 3 injections—first 0.25 cc., succeeding doses 0.5 cc. each. At 3 to 5 day intervals. If there has been exposure to infection, first two doses should be given on successive days.

TREATMENT.—Over 2 years: 3 or 4 injections. First day 0.25 cc., second day 0.5 cc., then 1 cc. at three day intervals. Under 2 years: 3 or 4 injections. Two doses of 0.25 cc. and two doses 0.5 cc. at the same intervals as above.

COMPOSITION & SIZES

Each cc. contains in solution and detoxicated, the antigens of H. pertussis 10,000 million. *Available in 5 cc., 10 cc. and 25 cc. rubber-capped bottles.*

Also Whooping Cough Forte (H. pertussis 50,000 million). Available to special order in 5 cc. only.

WHOOPING-COUGH
DISSOLVED VACCINE *Glaxo*

PRODUCT OF THE GLAXO LABORATORIES

Glaxo Laboratories Ltd., Greenford, Middlesex. BYRon 3434

G1-41

Control of WHOOPING-COUGH

GLAXO LABORATORIES LTD., GREENFORD, MIDDLESEX

Control of Whooping-Cough

Control of Whooping-Cough has been until recent years on general lines—skilled nursing, satisfactory diet, proper hygienic surroundings, cough medicine and anti-spasmodic treatment with, for example, belladonna.

Whilst these forms of treatment bring comfort to the patient, with some alleviation of symptoms, they do not shorten the course of the disease ; and unless strong sedatives are given, they do not control the number of spasms in the course of the day.

We must, therefore, look to new measures —measures that will prevent the disease, or, when it is established, control its symptoms and limit its duration.

VACCINATION— THE ESSENTIAL FACTORS

Although the causative organism of pertussis has been known since 1906, it is only recently that vaccine prevention and treatment have been successful. The reason for this is, that it was not originally appreciated that only during the first phase of the disease is the haemophilus pertussis virulent, and that therefore the vaccine must be prepared from selected smooth-phase bacteria. The importance of this was admirably stressed in an article by Sir J. C. G. Ledingham.* He states that the pertussis organism can be found in 80% of cases in the catarrhal stage of the disease, and in diminishing percentages as the weeks pass.

Further reasons for dissatisfaction with the earlier vaccines were toxicity and delayed antibody response. The first means a lengthy series of graduated doses and the second delayed immunity.

THE DISSOLVED VACCINE

Whooping-Cough Dissolved Vaccine *Glaxo* overcomes all these earlier difficulties.

In the first place, the vaccine is prepared from virulent strains of bacteria.

In the second place, the bacteria are dissolved in sodium lauryl sulphate, which is non-toxic in itself and also reduces the toxicity of the vaccine. Owing to this reduced toxicity effective doses can be given from the start without causing adverse symptoms. Furthermore, the antigenic content of the vaccine, being in solution, is immediately available for antibody production.

SUCCESSFUL PROPHYLAXIS

The advantages possessed by Whooping-Cough Dissolved Vaccine *Glaxo*, have been fully confirmed in reports of its use in general practice over a long period, both in prophylaxis and treatment.

In one school where children had been immunized three months previous to an outbreak of the disease, only 28 per cent. of the immunized children developed whooping-cough, while in the control non-immunized children, 43 per cent. contracted the disease, which displayed its usual marked symptoms and normal course of duration. The immunized 28 per cent. had only mild attacks, free from complications. Indeed, only the history of contact made it possible to diagnose the disease with certainty in two cases.

Summing up the use of Whooping-Cough Dissolved Vaccine *Glaxo* as a prophylactic measure, it may be said that the vaccine prevents the disease in a high proportion of those inoculated ; minimizes the symptoms and duration ; and prevents complications in most cases.

SUCCESSFUL TREATMENT

The effect of the vaccine in treatment is that it modifies the disease. After the first injection of Whooping-Cough Dissolved Vaccine *Glaxo*, the frequency of the spasms tends to diminish.

One doctor records the results he obtained during the course of an epidemic in which he treated 22 cases with Whooping-Cough Dissolved Vaccine *Glaxo*. In

* *Brit. med. J.*, (1939), **2**, 841.

Chilblains...two methods of attack

COLLOIDAL CALCIUM with OSTELIN

Early relief from severe or persistent chilblains can be secured by intensive vitamin D treatment. Colloidal Calcium with Ostelin supplies the factor in its most effective form . . . in colloidal combination with calcium. Injected subcutaneously, Colloidal Calcium with Ostelin has an immediate action, restoring circulation to normal and relieving pain and swelling so consistently as to be regarded as specific. The normal course is from 2 to 3 injections of 1 cc. each at 3-day intervals, though in chronic cases up to 6 injections may be needed. Each cc. contains 5,000 i.u. of vitamin D and 0·5 mg. of calcium.

Ampoules, 6 × 1 cc., 12 × 1 cc. Bottles, 30 cc.

OSTOCALCIUM TABLETS

In these days of very heavy demands upon the physician's time, the advantages of prophylaxis over treatment are more emphasized than ever. The calcium-vitamin D deficiency which predisposes to chilblains may be effectively guarded against by a routine of Ostocalcium tablets. Two to six tablets a day give efficient prophylaxis, while prompt administration of a heavier dosage will often clear up an incipient attack. In severe cases, Ostocalcium tablets are an invaluable oral supplement to parenteral treatment. Each tablet contains calc. sod. lact. 7½ gr., calc. phosph. 2½ gr., vitamin D, 500 i.u.

Tins of 50, 100, 500, 1,000.

PRODUCTS OF THE GLAXO LABORATORIES

GL

ADEXOLIN
Capsules: Tins of 25; 100; 500; 1,000
Emulsion: 4 oz., 8 oz. & 80 oz. bottles
Liquid: ½ oz. phials & 2 oz. bottles (with ½ m dropper); 4 oz. & 8 oz.

ANTIVIRIN NASAL JELLY
Long-nozzle tubes

ANTIVIRIN (*Antiviruses*)
Liquid: 30 cc. bottles
Jelly: Collapsible tubes

BARIUM MEAL *Glaxo*
6 oz. & 6 lb. tins

BERIN (*Vitamin* B_1)
Ampoules: 6; 12; 50 × 1 cc. *Tablets:* 25 & 100

BLOOD-GROUPING SERA *Glaxo*
Tubes. Types to Choice

CALDEFERRUM
(*Iron, Calcium, Vitamin D*)
Tablets: Bottles of 50; 100; 500; 1,000

CELIN (*Vitamin C*)
Ampoules: 6; 12; 50 × 1 cc. *Tablets:* 25 & 100

COLLOIDAL CALCIUM with OSTELIN
1 cc. ampoules: Boxes of 6 and 12; 30 cc. bottles

CLINESTROL (*Stilboestrol Glaxo*)
Ampoules: 1 cc. 6 × 1·0 mg.
Tablets: 0·5 & 1·0 mg. Bottles of 25 & 100

DEKADEXOLIN
Ampoules: 6; 12; 50 × 1 cc.

DEROBIN (*Di-oxy-anthranol*)
1 gm. & 10 gm. glass tubes

DISSOLVED VACCINES *Glaxo*
5 cc., 10 cc., & 25 cc rubber-capped bottles
Full List on Application

EMMENOPLEX 4 oz.

ERBOLIN CAPSULES
25; 100; 500; 1,000

ETHAMOLIN
6 × 2 cc. ampoules; 15 cc. & 30 cc. bottles

EXAMEN *Liver Extract*
2 cc. ampoules: Boxes of 3 & 6; 12 cc. phials

FAREX *Cereal Food*
½ lb. & 1 lb. cartons

FERSOLATE *Tablets*
Bottles of 100; 500; 1,000

FLAVOGEL
(*Acriflavine Jelly*)
1½ oz. collapsible tubes; 1 lb. jars

G.L. AMPOULES
Full List on Application

GLUCODIN
1 lb., 3 lb., & 7 lb. tins

HIGH-POTENCY OSTELIN TABLETS
Bottles of 25 & 100

KAPILON
(*Vitamin K analogue*)
Ampoules: 6 × 1 cc.
Liquid: ½ oz. phials (with ½ m dropper)
Tablets: 25 & 100

LEVU-CALCIN (*Calcium Levulinate Glaxo*)
3 × 10 cc. ampoules (10%)
6 × 2 cc. ampoules (15%)

MALTINE PREPARATIONS
9 oz. & 18 oz. bottles; 7 lb. jars

MALTO-DEXTRIN *Glaxo* 1 lb. tins

MERSAGEL
(*Fungicide Jelly*)
1½ oz. collapsible tubes; 2 lb. jars

SYRUP MINADEX
6 oz., 12 oz., 80 oz. bottles

OSTELIN
Emulsion: 8 oz.; 80 oz.
Liquid: ½ oz. phials; 2 oz., 4 oz., & 8 oz. bottles
Tablets: Bottles of 45 & 250; tins of 500 & 1,000

OSTERMILK
No. 1 & No. 2
16 oz. sealed tins

OSTOCALCIUM
Tablets
Tins of 50; 100; 500; 1,000

OSTOMALT
½ lb., 1 lb., & 7 lb. jars

PELONIN
(Nicotinic Acid *Glaxo*)
Ampoules: 6 & 12 × 2 cc.
Tablets: 25 & 100

PERMIDIN (*Vitamin P*) TABLETS Bottles of 50

PHYSOLACTIN
(*Lactogenic Hormone*)
15 cc. bottles

PREPALIN (*Vitamin A*)
Capsules: 25 & 100
Liquid: 8 cc. phials
Ampoules: 6 & 12 × 1 cc.

PYELECTAN
(*Iodoxyl Injection*)
Ampoules: 1 & 5 × 20 cc. and 1 × 3 cc.

PYELOSIL (*Diodone Injection*)
Ampoules: 1 & 5 × 20 cc. and 1 × 3 cc.

SOLUBLE PROTEIN *Glaxo* 4 oz., 32 oz. tins

STAPHYLOCOCCUS TOXOID *Glaxo*
3 cc. & 25 cc.: Diluted (1 : 5) and Full Strength

STIBOPHEN *Glaxo*
Bottles of 25 cc.

SULPHANILAMIDE TABLETS *Glaxo*
0·5 gm.: Bottles of 25; 100; 500; 1,000

VIOZIN OINTMENT
2 oz. & 1 lb. tins

VITEOLIN *Capsules*
Boxes of 25; 100; 500

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